AMENDMENTS TO THE CLAIMS

1. (Currently amended) System for providing a common time base between different locations on earth, comprising:

a first spacecraft (Sat 1A) carrying a first component of a communication channel, wherein the position of said first spacecraft (Sat 1A) is known,

a plurality of receiving stations at different locations on earth, wherein each receiving station is adapted to receive a first reference signal from said first component~~;~~,

synchronisation means adapted to provide a synchronised time base between the plurality of receiving stations~~;~~, and

correction means adapted to correct the synchronization error of the synchronized time base by the known position of the first spacecraft (Sat 1A) and in accordance with the propagation time of each received first reference signal.

2. (Currently amended) System according to claim 1, wherein at least one receiving station comprises a correlation receiver yielding a correlation gain for receiving the first reference signal.

3. (Currently amended)System according to claim 2, wherein the correlation receiver is based on the correlation of a predetermined signal pattern contained in the first reference signal.

4. (Original) System according to claim 2, wherein the correlation receiver is based on the spread spectrum demodulation of a spread spectrum signal.

5. (Original) System according to claim 4, wherein the spread spectrum demodulation yields a processing gain which corresponds to the correlation gain.

6. (Currently amended) Method for providing a common time base between different locations on earth with the aid of a first spacecraft (Sat 1A) carrying a first component of a communication channel, wherein the position of said first spacecraft (Sat 1A) is known, comprising the steps of:

receiving a first reference signal from said first component by a plurality of receiving stations at different locations on earth~~;~~,

providing a synchronised time base between the plurality of receiving stations~~;~~, and

correcting the synchronization error of the synchronized time base by the known position of the first spacecraft (Sat 1A) and in accordance with the propagation time of each received first reference signal.

7. (Currently amended) Method according to claim 6, wherein for at least one receiving station a correlation method yielding a correlation gain for receiving the first reference signal ~~and/or the second reference signal~~ is applied.

8. (Currently amended) Method according to claim 7, wherein the correlation method is based on the correlation of a predetermined signal pattern contained in the first reference signal ~~and/or the second reference signal~~.

9. (Original) Method according to claim 7, wherein the correlation method is based on the spread spectrum demodulation of a spread spectrum signal.

10. (Original) Method according to claim 9, wherein the spread spectrum demodulation yields a processing gain which corresponds to the correlation gain.

11. (Currently amended) Processing station for providing a common time base between different locations on earth with the aid of a first spacecraft (Sat 1A) carrying a first component of a communication channel, wherein the position of said first spacecraft (Sat 1A) is known, comprising:

propagation time data receiving means adapted to receive propagation time data from a plurality of receiving stations at different locations on earth, wherein each receiving station is adapted to receive a first reference signal from said first component and wherein a synchronised time base is provided between the plurality of receiving stations, and

correction means adapted to correct the synchronization error of the synchronized time base by the known position of the first spacecraft (Sat 1A) and in accordance with the propagation time of each received first reference signal.

12. (Currently amended) Processing method for providing a common time base between different locations on earth with the aid of a first spacecraft (Sat 1A) carrying a first component of a communication channel, wherein the position of said first spacecraft (Sat 1A) is known, comprising the steps of:

receiving propagation time data from a plurality of receiving stations at different locations on earth, wherein each receiving station is adapted to receive a first reference signal from said first component and wherein a synchronised time base is provided between the plurality of receiving stations, and

correcting the synchronization error of the synchronized time base by the known position of the first spacecraft (Sat 1A) and in accordance with the propagation time of each received first reference signal.

13. (Currently amended) ~~Ranging s~~System according to claim 1, further comprising means for determining ranging information of a second ~~first~~ spacecraft (Sat 2A) with the aid of ~~a second~~ the first spacecraft (Sat 1A) whose ranging information is known, wherein the ~~first~~ second spacecraft (Sat 2A) carries a ~~first~~ second component of a communication channel ~~and wherein the second spacecraft (Sat 1A) carries a second component of a communication channel, comprising:~~

~~a plurality of receiving stations at different locations on earth~~, wherein each receiving station is adapted to receive ~~a first reference signal from the first component and~~ independently a second reference signal from the second component~~;~~,

~~synchronisation means adapted to provide a synchronised time base between the plurality of receiving stations;~~

and wherein a calculation means is adapted to calculate said ranging information of said second spacecraft (Sat 2A) in accordance with the propagation time of each ~~first~~ second reference signal and in accordance with the corrected synchronized time base~~, wherein the synchronisation error of the synchronised time base is corrected by the known ranging information of the second spacecraft (Sat 1A) on the basis of each second reference signal~~.

14. (Currently amended) ~~Ranging s~~System according to claim 13, wherein at least one receiving station comprises a correlation receiver yielding a correlation gain for receiving the first reference signal and/or the second reference signal.

15. (Currently amended) ~~Ranging s~~System according to claim 14, wherein the correlation receiver is based on the correlation of a predetermined signal pattern contained in the first reference signal and/or the second reference signal.

16. (Currently amended) ~~Ranging s~~System according to claim 14, wherein the correlation receiver is based on the spread spectrum demodulation of a spread spectrum signal.

17. (Currently amended) ~~Ranging s~~System according to claim 16, wherein the spread spectrum demodulation yields a processing gain which corresponds to the correlation gain.

18. (Currently amended) ~~Ranging m~~Method according to claim 6, further comprising the steps of ~~for~~ determining ranging information of a second ~~first~~ spacecraft (Sat 2A) with the aid of ~~a second~~ the first spacecraft (Sat 1A) whose ranging information is known, wherein the ~~first~~ second spacecraft (Sat 2A) carries a ~~first~~second component of a communication channel, ~~and~~ wherein ~~the~~

~~second spacecraft (Sat 1A) carries a second component of a communication channel, comprising the steps of:~~

~~receiving a first reference signal from said first component and~~ a second reference signal is received from said second component independently by ~~a~~ said plurality of receiving stations at different locations on earth~~;~~,

~~providing a synchronised time base between the plurality of receiving stations;~~

~~calculating~~ and wherein said ranging information of said second spacecraft (Sat 2A) is calculated in accordance with the propagation time of each ~~first~~ second reference signal and in accordance with the corrected synchronized time base~~, wherein the synchronisation error of the synchronised time base is corrected by the known ranging information of the second spacecraft (Sat 1A) on the basis of each second reference signal~~.

19. (Original) Method according to claim 18, wherein for at least one receiving station a correlation method yielding a correlation gain for receiving the first reference signal and/or the second reference signal is applied.

20. (Original) Method according to claim 19, wherein the correlation method is based on the correlation of a predetermined signal pattern contained in the first reference signal and/or the second reference signal.

21. (Original) Method according to claim 19, wherein the correlation method is based on the spread spectrum demodulation of a spread spectrum signal.

22. (Original) Method according to claim 21, wherein the spread spectrum demodulation yields a processing gain which corresponds to the correlation gain.

23. (Cancelled)

24. (Cancelled)

25. (Currently amended) Processing station according to claim 11, further comprising means for processing ranging information of a second ~~first~~ spacecraft (Sat 2A) with the aid of a ~~second~~ the first spacecraft (Sat 1A) whose ranging information is known, wherein the ~~first~~ second spacecraft (Sat 2A) carries a ~~first~~ second component of a communication channel, ~~and wherein the second spacecraft (Sat 1A) carries a second component of a communication channel, comprising:~~

~~propagation time data receiving means adapted to receive propagation time data from a plurality of receiving stations at different locations on earth;~~

wherein each receiving station is adapted to receive a ~~first reference signal from the first component and~~ independently a second reference signal from the second component, and wherein a calculation means is adapted to calculate said ranging information of said second spacecraft (Sat 2A) in accordance with the propagation time of each second reference signal and in accordance with the corrected synchronized time base ~~wherein a synchronised time base is provided between the plurality of receiving stations, and wherein the synchronisation error of the synchronised time base is corrected by the known ranging information of the second spacecraft (Sat 1A) on the basis of each second reference signal~~.

26. (Currently amended) Processing method according to claim 12, further comprising the steps of ~~for~~ processing ranging information of a second ~~first~~ spacecraft (Sat 2A) with the aid of ~~a~~ ~~second~~ the first spacecraft (Sat 1A) whose ranging information is known, wherein the ~~first~~ second spacecraft (Sat 2A) carries a ~~first~~ second component of a communication channel, ~~and wherein the second spacecraft (Sat 1A) carries a second component of a communication channel, comprising the steps of:~~

~~receiving propagation time data from a plurality of receiving stations at different locations on earth;~~

wherein each receiving station is adapted to receive ~~a first reference signal from the first component and~~ independently a second reference signal from the second component, and wherein said ranging information of said second spacecraft (Sat 2A) is calculated in accordance with the propagation time of each second reference signal and in accordance with the corrected synchronized time base ~~wherein a synchronised time base is provided between the plurality of receiving stations, and wherein the synchronisation error of the synchronised time base is corrected by the known ranging information of the second spacecraft (Sat 1A) on the basis of each second reference signal~~.